



Selected Publications

Allison M Barry, Julia R. Sondermann, Jan-Henrik Sondermann, David Gomez-Varela and **Manuela Schmidt** (2018). Region resolved quantitative proteome profiling reveals molecular dynamics associated with chronic pain in the PNS and spinal cord. *Front. Mol. Neurosci.* doi: 10.3389/fnmol.2018.00259

David Gomez-Varela, Allison M Barry, **Manuela Schmidt**. (2018). Proteome-based systems biology in chronic pain. *Journal of Proteomics*. Review article. doi:10.1016/j.jprot.2018.04.004

Pratibha Narayanan, Meike Huette, Galina Kudryasheva, Francisco J Taberner, Stefan Lechner, Florian Rehfeldt, David Gomez-Varela, **Manuela Schmidt**. (2018). Myotubularin related protein-2 and its phospholipid substrate PIP2 control Piezo2-mediated mechanotransduction in peripheral sensory neurons. *eLife*. doi: 10.7554/eLife.32346

Rouwette T, Sondermann J, Avenali L, Gomez-Varela D, **Schmidt M.** (2016). Standardized profiling of the membrane-enriched proteome of mouse dorsal root ganglia provides novel insights into chronic pain. *Molecular & Cellular Proteomics*, doi: 10.1074/mcp.M116.058966.

Avenali L, Narayanan P, Rouwette T, Cervellini I, Sereda M, Gomez-Varela D, **Schmidt M.** (2014). Annexin A2 Regulates TRPA1-Dependent Nociception. *J Neurosci.* 34(44):14506-16. doi: 10.1523/JNEUROSCI.1801-14.

Exploring molecular dynamics in the vertebrate somatosensory system – novel insights from proteome-based systems biology

Dr. Manuela Schmidt

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Medicine, Göttingen

Monday, August 27, 2018, 2.00 pm
Institut für Physiology II, Hörsaal (1.OG) -
Nussalle 11

My research is driven by the motivation to decipher the dynamics of protein networks underlying vertebrate somatosensation in health, development and disease (such as chronic pain conditions). To this end, my team combines molecular biology, biochemistry and latest proteomics techniques, electrophysiology, primary neuronal cell culture, mouse models of painful pathologies and in vivo virus-mediated gene transfer. This multidisciplinary approach has enabled us to reveal ion channel-associated signaling complexes (i.e. the interactome of TRPV1, TRPA1 and Piezo2 channels) with pathological relevance for pain. Moreover, in a systems biology approach my team investigates the spatiotemporal dynamics of protein networks yielding unprecedented mechanistic insights into developmental and chronic pain-associated plasticity.